America's Top Five Transportation Headaches

-- and Their Remedies

The nation's greatest challenges in providing a well-maintained, efficient and safe highway, bridge and transit system and the best opportunities for gaining transportation headache relief

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The American Association of State Highway and Transportation Officials is a nonprofit, nonpartisan association representing highway and transportation departments in the 50 states, the District of Columbia, and Puerto Rico. It represents all five transportation modes: air, highways, public transportation, rail, and water. Its primary goal is to foster the development, operation, and maintenance of an integrated national transportation system.

Founded in 1971, TRIP ® of Washington, DC is a nonprofit organization that researches, evaluates and distributes economic and technical data on highway transportation issues. TRIP is sponsored by insurance companies, equipment manufacturers, distributors and suppliers; businesses involved in highway engineering, construction and finance; labor unions; and organizations concerned with an efficient and safe highway transportation network.

Executive Summary

America has a transportation headache. Throughout the country, roads and bridges are deteriorating, highways are congested, buses and rail cars are overcrowded and many roadways lack desirable safety features.

The good news is that we know how to relieve the nation's transportation headaches. And by offering relief to American travelers by improving the condition, safety and efficiency of the nation's roads, bridges, highways and public transit systems, relief will also be offered to America's struggling economy.

This report, presented by the American Association of State Highway and Transportation Officials (AASHTO) and TRIP, identifies America's top five transportation headaches and offers five remedies for relief. Addressing the nation's transportation headaches will not only improve America's transportation system, but will also provide a significant short- and long-term boost to the nation's economic recovery.

TOP FIVE TRANSPORTATION HEADACHES

Transportation Headache Number One: Aging Bridges, Crumbling Pavements and Deteriorating Transit

Deteriorated and aging pavements provide American drivers with a rough ride, contributing to increased vehicle maintenance costs, particularly for urban motorists, as urban pavement deficiency rates are significantly higher than in non-urban areas.

- In 2007, one-quarter of major roadways in the nation's major metropolitan areas – Interstates, freeways and other principal arterial routes – had pavements that were rated in poor condition and provided an unacceptably rough ride to motorists.
- Overall, 12 percent of America's major roadways are in poor condition.

Approximately one in four of the nation's bridges are either in need of significant repair or are too narrow to handle today's traffic. As the bulk of the nation's bridges approach 50 years in service, many will require costly reconstruction or replacement to remain open.

- In 2008 12 percent of the nation's bridges in had significant deterioration of their deck, supports or other major components.
- Thirteen percent of the nation's bridges no longer meet current highway standards, often because of narrow lanes, inadequate clearances or poor alignment with the approaching roadway.
- The average age of the nation's bridges is 43 years. Most bridges need significant repairs by the time they reach 50 years of age.

The nation's buses and rail cars are aging and many need replacement.

- Fifty-nine percent of the nation's transit buses (40-feet or longer) have either exceeded their service life or will do so within the next six years.
- Half of all of the nation's transit rail cars have either exceeded their service life or will do so within the next six years.

Transportation Headache Number Two: Congested Roads, Highways and Transit Systems

Congestion is increasing across the nation, and "rush hour" is getting longer, slowing commuting and commerce, not only in the nation's largest urban areas, but also in mid- and smaller-size cities.

- The average rush hour commuter spends an additional 38 hours annually – an average work week - stuck in traffic. This figure is up from 14 hours in 1982.
- The length of "rush hour" doubled in the nation's urban areas from three hours in 1982 to six hours in 2005.
- In 1982, Los Angeles was the only urban area in the U.S. where rush-hour commuters lost 40 or more hours per year due to traffic congestion. Today, 28 urban areas experience 40 or more hours of delay as a result of traffic congestion.
- Almost one half of the nation's urban Interstates, highways or freeways are considered congested, because they carry a level of traffic that is likely to result in significant delays during peak travel hours.

Increasing traffic congestion is costing the nation's freight transportation network nearly $8 billion per year, reducing the productivity of the U.S. economy. Trucking is the backbone of the nation's freight transportation system, transporting virtually everything we eat, drink or buy. Higher transportation costs mean higher prices for consumers.

- The nation's freight system (all modes) transported approximately 15 billion in goods in 2005, nearly 80 percent of which moved by trucks on the roads.
- The share of the nation's gross domestic product (GDP) spent on freight transportation is increasing, signaling a reduction in transport efficiency. The share of U.S. GDP spent on logistics increased from 8.6 percent in 2003 to 10.1 percent in 2007.
- A Federal Highway Administration report found that freight highway bottlenecks are causing 243 million hours of freight delays annually, resulting in annual delay costs of $7.8 billion per year.
- The freight tonnage moved in the U.S. is forecast to nearly double between 2005 and 2035, with trucks taking 84 percent of the growth.

The nation's buses, rail cars and transit facilities are increasingly crowded since increased use has not been matched with adequate funding.

- Eighty-five percent of transit systems report capacity constraints on portions of their system. Almost four out of ten of these transit agencies report that they are now turning away passengers.
- Virtually all transit agencies (91 percent) are constrained in their ability to add service, with two-thirds reporting insufficient revenue or budget to operate additional service as the most significant constraint.

Transportation Headache Number Three: Traffic Fatalities and Injuries

Although the number of traffic fatalities in 2008 is likely to be the lowest in nearly half a century, traffic crashes remain a significant source of deaths and major injuries. Some 41,000 lives were lost on highways in 2007.

- Several factors are associated with vehicle crashes that result in fatalities, including vehicle and roadway characteristics and driver behavior. Highway safety experts estimate that roadway characteristics such as the number of lanes, whether traffic traveling in opposite directions is separated, lane widths and intersection design are a factor in approximately one-third of all fatal traffic accidents.
- Highway improvements such as adding turn lanes, removing or shielding obstacles, adding medians, widening lanes, widening and paving shoulders, improving intersection layouts, providing better road markings, and installing or upgrading traffic signals, have been found to reduce the severity of serious traffic crashes.

Transportation Headache Number Four: Demand is Stressing the System

Despite the impacts of the economic downturn, travel on the nation's roadways and public transit systems has increased significantly since 1990 and is expected to continue to increase as population and economic activity grow. Increased travel results in additional wear and tear on our nation's roads, highways, bridges and public transit systems.

- The U.S. population increased 23 percent from 1990 to 2008, and is expected to grow another 19 percent by 2030.
- Vehicle travel increased by 41 percent from 1990 to 2007 – jumping from approximately 2.1 trillion vehicle miles traveled (VMT) in 1990 to approximately 3 trillion VMT in 2007. Even with soaring fuel prices for much of 2008, motorists still logged 2.9 trillion miles on the nation's highways.
- By 2030, vehicle travel in the U.S. is projected to increase another 38 percent, to approximately 4.2 trillion vehicle miles of travel, based on a Federal Highway Administration forecast of an annual VMT growth of 1.4 percent.
- Passenger miles of travel on the nation's public transit systems increased by 41 percent between 1995 and 2008.

Transportation Headache Number Five: Everyone's Costs Are Rising

Roads and highways that are congested, deficient, or lack desirable safety features cost Americans $249 billion annually in the form of lost lives, time and money.

- The average urban motorist in the U.S. is paying $413 annually in additional vehicle operating costs as a result of driving on roads in need of repair. The total cost nationally of driving on substandard roads is estimated at $65 billion annually. Driving on roads in rough condition increases consumer costs by accelerating vehicle deterioration, increasing the frequency of needed maintenance and increasing fuel consumption and tire wear.
- The Texas Transportation Institute reported in its 2007 Urban Mobility Report that the cost of traffic congestion in lost time and wasted fuel is $78 billion annually.
- The cost of fatal and injury causing traffic crashes in which roadway design was a factor is approximately $106 billion per year. These costs include medical, emergency services, police services, lost productivity and property damage.

Partly due to increased foreign consumption, the cost of materials used for road, highway and bridge construction has increased dramatically in recent years, limiting the ability of local and state governments to fund needed road repairs and improvements.

- The cost of roadway improvements is escalating because the price of key materials needed for highway and bridge construction has increased rapidly. Over the five-year period from November 2003 to November 2008, the average cost of materials used for highway and bridge construction – including asphalt, concrete, steel, lumber and diesel – increased by 55 percent.

While material costs are rising, federal, state and local investment in roads, highways, bridges and public transit are falling far short of levels needed to improve the condition and effectiveness of the nation's highway, bridge and transit systems.

- In 2006 America invested $92 billion in highway and transit capital improvements. The congressionally appointed National Surface Transportation Policy and Revenue Study Commission found in its 2008 report that annual investment would need to increase to between $228 and $272 billion annually to **significantly improve** the highway, transit, passenger rail and freight system.
- Twenty states have cut $7.6 billion from their fiscal year 2009 budgets, and 30 states have identified additional shortfalls totaling more than $30 billion. Twenty-five states have also identified shortfalls of $60 billion for FY 2010. In many cases, these budget shortfalls are forcing states to delay billions of dollars in planned transportation improvements.

TOP FIVE TRANSPORTATION HEADACHE REMEDIES

Although there are significant challenges in providing Americans with a safe, well-maintained, efficient surface transportation system, potential sources of relief from transportation headaches are available.

Transportation Headache Remedy Number One: Begin work immediately on "ready-to-go" transportation projects.

Transportation officials have identified numerous "ready-to-go" projects that could start immediately to improve the condition and performance of the nation's roads, highways, bridges and public transit systems. These projects would provide smoother pavement conditions, repair deficient bridges, improve transit service, relieve traffic congestion and increase traffic safety.

- The American Association of State Highway and Transportation Officials (AASHTO) found in a 2008 survey that state transportation departments have 5,280 highway and bridge projects worth $64 billion that can be under contract within 180 days of the approval of additional funding.
- The American Public Transit Association found in a recent survey that 736 transit projects totaling $12.2 billion are ready to begin within 90 days if funding is made available.

Transportation Headache Remedy Number Two: Boost transportation funding to stimulate economic growth in the short, medium and long-term.

The U.S. construction sector has been particularly hard hit by unemployment. Swift implementation of a significant program of transportation improvements can support good-paying jobs and boost economic productivity.

- In December 2008, the national unemployment rate reached 7.2 percent overall and 15.3 percent in the construction sector.
- Funding for transportation projects provides an immediate economic boost in related industries as these industries immediately start to increase production to meet the anticipated additional demand created by transportation spending. These related industries include mining, energy and equipment and vehicle manufacturing that provide materials or products related to surface transportation repairs or improvements.
- A 2007 analysis by the Federal Highway Administration found that every $1 billion invested in highway construction would support approximately 27,800 jobs, including approximately 9,500 in the construction sector, approximately 4,300 jobs in industries supporting the construction sector, and approximately 14,000 other jobs induced in non-construction related sectors of the economy. If $1 billion in federal highway spending is combined with $250 million in state funding, the combined investment would support 34,779 jobs.

- Transportation projects that reduce traffic congestion levels can also have a significant positive impact on long-term job creation by improving the nation's productivity. A Transportation Research Board report found that worsening traffic congestion will likely reduce the efficiency and competitiveness of some U.S. businesses. The report also found that some U.S. businesses are likely to respond to increasing congestion by moving some facilities to less-congested parts of the U.S. or to other countries.

Transportation Headache Remedy Number Three: Recognize that the benefits of surface transportation improvements outweigh the costs.

Improvements to the nation's roadway and public transit systems provide public benefits outweighing the costs.

- The U.S. Department of Transportation estimates that every dollar invested in the nation's highway system yields $5.69 in economic benefits in reduced delays, improved safety, reduced emissions, lower vehicle operating costs and reduced maintenance costs.
- Every dollar invested in the nation's public transit system has been found to provide $6 in benefits in the form of time savings, parking and travel time savings, avoided job loss, avoided welfare payments, avoided vehicle crashes, avoided congestion and pollution, increased central city labor opportunities, increased mobility for people without access to private vehicles, and improved educational opportunities.

Transportation Headache Remedy Number Four: Use innovation and advanced technology to build highway and bridge improvements that last longer, are environmentally savvy, and take less time.

Transportation agencies and the private sector have made significant progress in developing highway and bridge designs, construction techniques and materials that last longer and require less time for repairs.

- Making early initial repairs to pavement surfaces while they are still in good condition reduces the cost of keeping roads smooth by delaying the need for costly reconstruction.
- The use of thicker pavements and more durable designs and materials increase the life span of road and highway surfaces and delay the need for significant repairs. These new pavements include high performance concrete pavements and improved hot mix asphalt pavements.
- Transportation agencies are increasingly using innovative designs, materials and construction methods for bridge construction and repair to insure that bridges last longer and to reduce construction times and traffic disruptions.

Transportation Headache Remedy Number Five: Make a down-payment on the nation's transportation needs immediately, and address long-term improvements in the near future.

Immediate transportation infrastructure investment can play a significant role in hastening the nation's economic recovery. In addition, crafting a new long-range federal surface transportation program to replace the current program, which expires on September 30, 2009, provides an opportunity to set the nation on a course to achieving a safe, reliable and well-maintained system of roads, highways, bridges and public transit. Many comprehensive proposals have already been set forth that offer new ideas to meet the nation's transportation needs.

- The Congressionally mandated National Surface Transportation Policy and Revenue Study Commission released a long-term plan to ensure that the nation's surface transportation system meets America's future mobility needs and that it remains the preeminent surface transportation system in the world, one that is well-maintained, safe and reliable.
- The Commission calls for allocating funding through outcome based, performance-driven programs supported by cost/benefit evaluations rather than political earmarking.
- The Commission recommends consolidating the more than 100 current transportation funding programs into ten programs focused on key areas of national interest, including congestion relief, preservation of roads and bridges, improved freight transportation, improved roadway safety, improved rural access, improved environmental stewardship, and the development of environmentally-friendly energy sources.
- AASHTO has also developed a plan for a future federal surface transportation program that would be accountable for results, would make investments based on community needs and would deliver projects on time and on budget.
- AASHTO proposes that the federal surface transportation program be based on goals for meeting national objectives, be based on state-driven performance measures and be focused on six objectives of national interest: preservation and renewal, interstate commerce, safety, congestion reduction and connectivity for urban and rural areas, system operations and environmental protection.

Introduction

America has a transportation headache. Throughout the country, roads and bridges are deteriorated, highways are congested, buses and rail cars are overcrowded and many roadways lack desirable safety features.

The good news is that we know how to relieve the nation's transportation headaches. And by offering relief to American travelers by improving the condition, safety and efficiency of the nation's roads, bridges, highways and public transit systems, relief will also be offered to America's struggling economy.

Addressing the nation's transportation headaches will not only improve America's transportation system, but will also provide a significant short- and long-term boost to the nation's economic recovery.

America's system of roads, highways, bridges and public transit provides its citizens, visitors and businesses with a high level of mobility. As the backbone of the nation's economy, the surface transportation system plays a vital role in the nation's economic well-being.

As the U.S. looks to rebound from a significant economic downturn, it will need to modernize its surface transportation system by improving the physical condition of its transportation network and enhancing the system's ability to provide efficient and reliable mobility to the nation's citizens, visitors and businesses. The physical condition and efficiency of this network of roads, highways, bridges and public transit systems will be an important factor in the rate and effectiveness of the nation's economic recovery. Making needed improvements to America's roads, highways, bridges and public transit systems would provide a significant boost to the U.S. economy by stimulating short and long-term economic growth.

Numerous segments of America's surface transportation system have significant deterioration, are congested or crowded, and lack adequate capacity to provide reliable mobility, causing headaches for the nation's residents, visitors, businesses and state and local governments. In this report, AASHTO and TRIP look at the condition and use of the nation's system of roads, highways, bridges and public transit systems and provide information on America's top five surface transportation headaches and the top five transportation headache remedies. All data used in the report is the latest available.

Sources of information for this report include the American Public Transportation Association, the Federal Highway Administration, the National Highway Traffic Safety Administration, the Texas Transportation Institute (TTI), the U.S. Bureau of Economic Analysis, U.S. Census Bureau and the U.S. Department of Labor.

America's Top Five Transportation Headaches

Transportation Headache Number One: Aging Bridges, Crumbling Pavements and Deteriorating Transit

Deteriorated and aging pavements provide American drivers with a rough ride, contributing to increased vehicle maintenance costs, particularly for urban motorists, as urban pavement deficiency rates are significantly higher than in non-urban areas.

In 2007, one-quarter of the nation's major roadways in metropolitan areas – Interstates, freeways and other principal arterial routes – had pavements that were rated in poor condition and provided an unacceptably rough ride to motorists.[1] Overall, 12 percent of America's major roadways are in poor condition.[2]

Roads rated in poor condition may have cracked or broken pavements. These roads often show pronounced signs of pavement wear and deterioration and may also have significant distress in their underlying foundation. Road or highway surfaces rated poor provide an unacceptable ride quality and are often in need of resurfacing, while some may need to be reconstructed to correct problems in the underlying surface.

Approximately one in four of the nation's bridges are either in need of significant repair or are too narrow to handle today's traffic. As the bulk of the nation's bridges approach 50 years in service, many will require costly reconstruction or replacement to remain open.

Twelve percent of the nation's bridges were rated structurally deficient in 2008.[3] A bridge is structurally deficient if there is significant deterioration of the bridge deck, supports or other major components. Structurally deficient bridges are often posted for lower weight or closed to traffic, restricting or redirecting large vehicles, including commercial trucks, school buses and emergency services vehicles.

Thirteen percent of the nation's bridges were functionally obsolete in 2008.[4] Bridges that are functionally obsolete no longer meet current highway design standards, often because of narrow lanes, inadequate clearances or poor alignment.

The average age of the nation's bridges is 43 years.[5] Most bridges need significant repairs by the time they reach 50 years of age.

The nation's buses and rail cars are aging and need replacement.

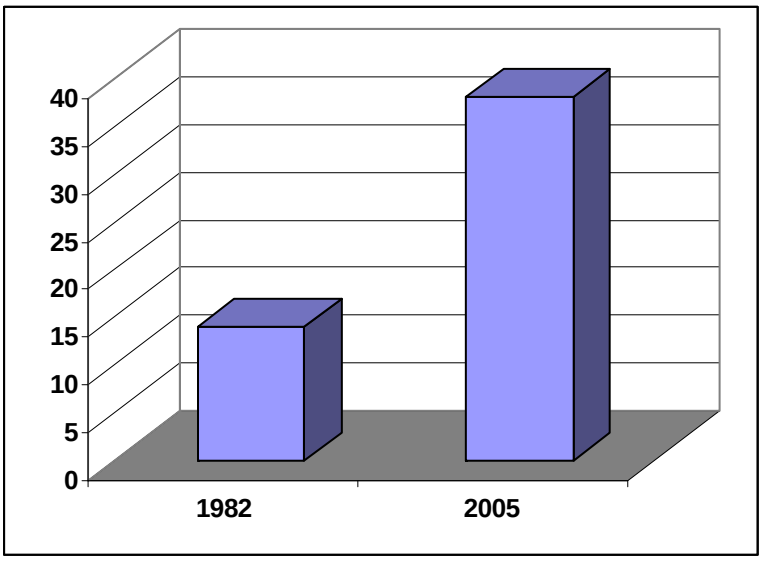
A significant portion of America's public transit buses and rail cars are deficient. Fifty-nine percent of the nation's transit buses (40-feet or longer) have either exceeded their service life or will do so within the next six years.[6] Similarly, half of the nation's transit rail cars have either exceeded their service life or will do so within the next six years.[7]

Transportation Headache Number Two: Congested Roads, Highways and Transit Systems

Congestion is increasing across the nation, and "rush hour" is getting longer, slowing commuting and commerce, not only in the nation's largest urban areas, but also in mid- and smaller-size cities.

The average rush hour commuter spends an additional 38 hours annually stuck in traffic. This figure is up from 14 hours in 1982.[8]

Chart 1. Average annual rush hour commuter delay in 1982 and 2005 (latest TTI data).



Source: TTI

The length of "rush hour" has doubled in the nation's urban areas. The average amount of congested weekday travel in urban areas with a population of at least 1 million doubled from approximately 3 hours in 1982 to approximately 6 hours in 2005.[9]

In 1982, Los Angeles was the only urban area in the U.S. where rush hour commuters lost 40 or more hours-per-year due to traffic congestion. Today, L.A. commuters need no longer feel alone. Rush-hour commuters in 28 urban areas across the country annually experience 40 or more hours of delay as a result of traffic congestion.[10]

Forty-five percent of the nation's urban Interstates, highways or freeways are considered congested, because they carry a level of traffic that is likely to result in significant delays during peak travel hours.[11]

Increasing traffic congestion is costing the nation's freight transportation network nearly $8 billion per year, reducing the productivity of the U.S. economy. Trucking is the backbone of the nation's freight transportation system, transporting virtually everything we eat, drink or buy. Higher transportation costs mean higher prices for consumers.

The nation's freight system (all modes) carried approximately 15 billion tons of goods in 2005, nearly 80 percent of which moved by trucks on the roads.[12]

U.S. businesses are highly reliant on efficient, reliable transportation, particularly by large trucks, which carry the majority of the nation's freight. When traffic congestion increases, it lengthens the time it takes to deliver products and makes delivery times unpredictable, which reduces the reliability of goods movement, hurting the productivity of U.S. firms. The share of the nation's gross domestic product (GDP) spent on freight transportation is increasing, signaling a reduction in transport efficiency. The share of U.S. GDP spent on logistics increased from 8.6 percent in 2003 to 10.1 percent in 2007.[13]

Bottlenecks on the nation's major roads and highways create significant delays for U.S. firms. A Federal Highway Administration report found that freight highway bottlenecks are causing 243 million hours of freight delays annually, resulting in annual delay costs of $7.8 billion per year.[14] Freight delays are likely to continue to increase unless improvements are made to the nation's major roads and highways. The freight tonnage moved in the U.S. is forecast to nearly double between 2005 and 2035, with trucks taking 84 percent of the growth.[15]

The nation's buses, rail cars and transit facilities are increasingly crowded since increased transit use has not been matched with adequate funding.

Many of the nation's transit routes are increasingly crowded and most public transit agencies are financially constrained from offering additional service to relieve transit congestion. In a recent survey conducted by the American Public Transportation Association, 85 percent of transit systems report capacity constraints on portions of their system.[16] Almost four out of ten of these transit agencies report that they are now turning away passengers. Virtually all transit agencies (91 percent) are constrained in their ability to add service, with two-thirds reporting insufficient revenue or budgets to operate additional service as the most significant constraint.[17]

Transportation Headache Number Three: Traffic Fatalities and Injuries

Although the number of traffic fatalities in 2008 is likely to be the lowest in nearly half a century, traffic crashes remain a significant source of deaths and major injuries. Some 41,000 lives were lost on the nation's roads in 2007. [18]

The nation's roads and highways continue to be the location of numerous fatal and injury-causing crashes. Based on the rate of traffic fatalities during the first 10 months of 2008, traffic crashes in 2008 are expected to be at the lowest level since 1961, but those levels are still unacceptable.

Several factors are associated with vehicle crashes that result in fatalities, including vehicle and roadway characteristics and driver behavior. Highway safety experts estimate that roadway features such as number of lanes, whether traffic traveling in the opposite direction is separated, lane widths and intersection design are a factor in approximately one-third of all fatal traffic accidents.

Highway improvements such as adding turn lanes, removing or shielding obstacles, adding medians, widening lanes, widening and paving shoulders, improving intersection layouts, providing better road markings, and installing or upgrading traffic signals, have been found to reduce the number and severity of serious traffic crashes.

Transportation Headache Number Four: Demand is Stressing the System

Despite the impacts of the economic downturn, travel on the nation's roadways and public transit systems has increased significantly since 1990 and is expected to continue to increase as population and economic activity grow. Increased travel results in additional wear and tear on our nation's roads, highways, bridges and public transit systems.

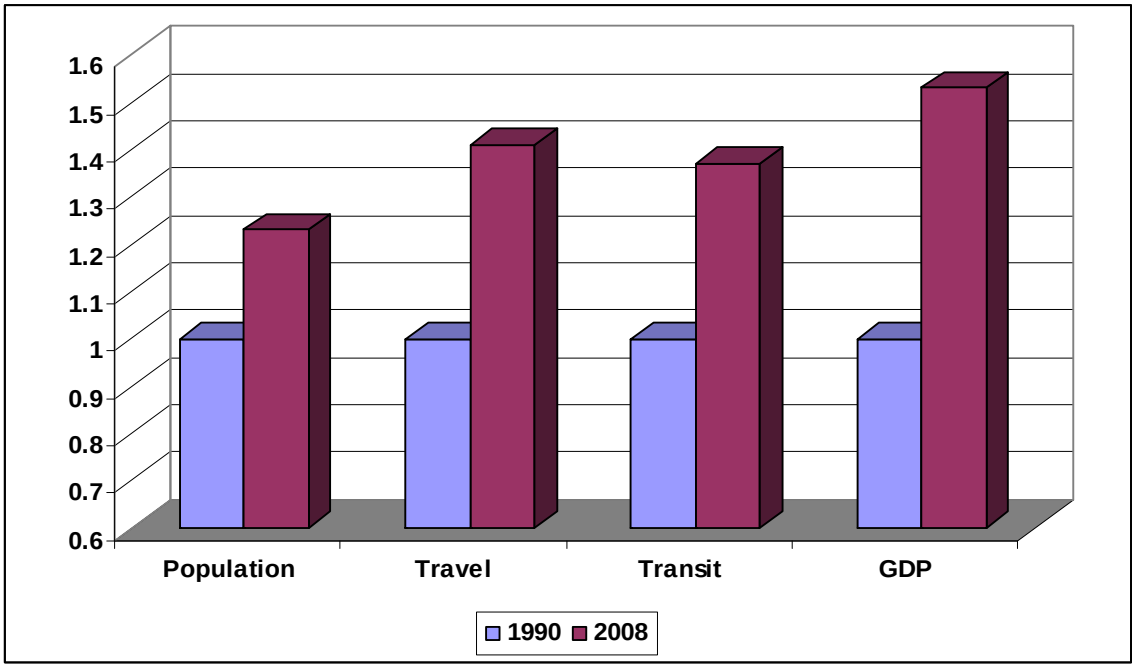
The population of the U.S. reached 306 million in 2008, an increase of 23 percent since 1990.[19] The nation's population is projected to increase to approximately 364 million residents by 2030, an increase of 19 percent.[20]

Vehicle travel in the U.S. increased by 41 percent from 1990 to 2007 – jumping from approximately 2.1 trillion vehicle miles traveled (VMT) in 1990 to approximately 3 trillion VMT in 2007.[21] Vehicle travel during the first 10 months of 2008 is actually down 3.5 percent from the same period in 2007,[22] likely as a result of the nation's economic downturn and the temporary spike in fuel prices. By 2030, however, vehicle travel in the U.S. is projected to increase another 38 percent, to approximately 4.2 trillion vehicle miles of travel.[23]

Since 1995, ridership on public transit has also experienced significant growth. Passenger miles of travel on the nation's public transit systems increased by 41 percent between 1995 and 2008.[24]

The significant rate of growth of the nation's economy is a critical factor in the continued increase in travel on the nation's surface transportation system. From 1990 to 2007, the nation's gross domestic product (GDP), a measure of U.S. economic output, increased by 53 percent, when adjusted for inflation.[25]

Chart 3. Increase in population, vehicle travel, transit passenger miles, and gross domestic product, adjusted for inflation from 1990 to 2008 (vehicle travel and GDP through 2007). One equals 1990 level.



Source: U.S. Census Bureau, Federal Highway Administration, American Public Transportation Association, U.S. Bureau of Economic Analysis.

Transportation Headache Number Five: Everyone's Costs Are Rising

Roads and highways that are congested, deficient, or lack desirable safety features cost Americans $249 billion annually in the form of lost lives, time and money.

Although the construction, repair and maintenance of roads, highways and bridges are largely paid for by federal, state and local governments, the costs caused by inadequate roads and highways in the form of reduced safety, wasted time and additional vehicle operating cost are largely borne by individuals.

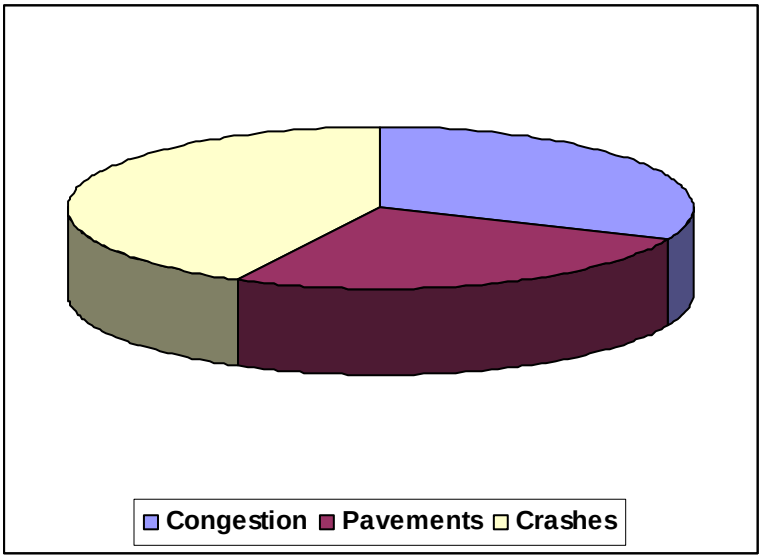
TRIP annually estimates the cost of additional vehicle operating costs paid by motorists as a result of driving on roads in disrepair. TRIP's most recent report in 2008 found that the average urban motorist in the U.S. is paying $413 annually in additional vehicle operating costs as a result of driving on roads in need of repair.[26] The total cost nationally of driving on substandard roads is estimated at $65 billion annually. [27] Driving on roads in rough condition increases consumer costs by accelerating vehicle deterioration, increasing the frequency of

needed maintenance and increasing fuel consumption.

The National Highway Traffic Safety Administration has developed a methodology that allows annual estimates of the financial costs of fatal and injury causing traffic crashes. These costs include medical care, emergency services, police services, lost productivity and property damage.[28] By applying this methodology to 2007 traffic crash data, adjusting for inflation, and estimating that roadway design was a factor in one-third of fatal and injury causing traffic crashes, TRIP estimates that the cost of traffic crashes, in which roadway design was a factor, is approximately $106 billion per year.

The Texas Transportation Institute reported in its most recent report on urban traffic congestion, the 2007 Urban Mobility Report, that the cost of traffic congestion in lost time and wasted fuel in the nation's 437 largest urban areas is $78 billion annually.[29]

Chart 2. The cost to the public of deficient roads and highways



Source: TRIP, TTI

Partly due to increased foreign competition, the cost of materials used for road, highway and bridge construction has increased dramatically in recent years, limiting the ability of local and state governments to fund needed road repairs and improvements.

The cost of roadway improvements is escalating because the price of key materials needed for highway and bridge construction has increased rapidly. Over the five-year period from November 2003 to November 2008, the average cost of materials used for highway construction, including asphalt, concrete, steel, lumber and diesel increased by 55 percent.[30]

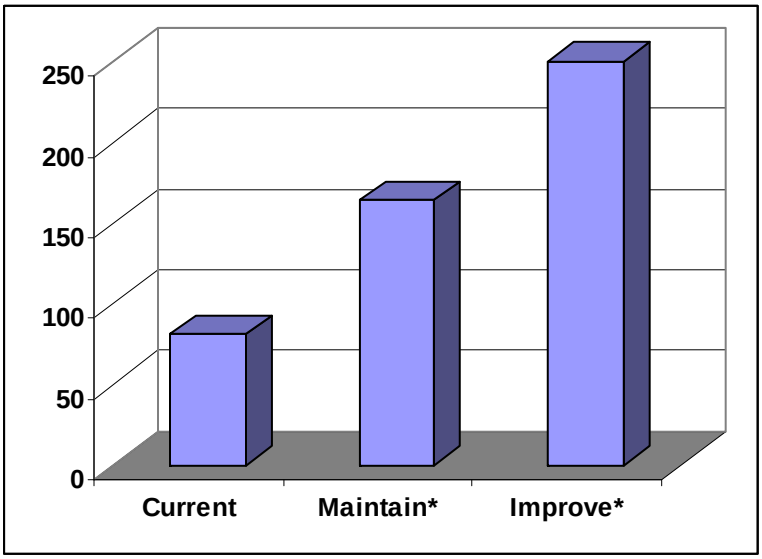
While material costs are rising, federal, state and local investment in roads, highways, bridges and public transit are falling far short of levels needed to improve the condition and effectiveness of the nation's highway, bridge and transit systems.

The Congressionally appointed National Surface Transportation Policy and Revenue Study Commission found in its 2008 report that at the current level of investment in surface transportation, the nation's highways and bridges would further deteriorate, traffic casualties would increase and traffic congestion would worsen, jeopardizing America's economic leadership through the erosion of the reliability of its surface transportation system.

In 2006, $78.7 billion was invested in capital improvements for highways, and $13 billion for transit. The Commission report found that through 2020, the nation's capital investment in roads, highways, bridges and transit would need to increase to between $144 and $184 billion annually to maintain the current physical conditions of roads, highways, bridges and public transit assets and to achieve a modest reduction in traffic congestion levels.[31]

The Commission report found that through 2020, the nation's current $81 billion annual investment in roads, highways, bridges and transit would need to increase to between $228 and $272 billion annually to improve significantly the current physical condition of roads, highways, bridges and public transit assets and to achieve significant reductions in traffic congestion.[32]

Chart 4. Current annual U.S. capital investment in roads, highways, bridges and transit and annual spending needed to maintain the condition and performance of this system and the amount needed to significantly improve the condition and the performance of the system.



Source: National Surface Transportation Policy and Revenue Study Commission.
***Maintain and improve estimates are averages of funding range cited by the Commission.**

The current economic downturn has had a dramatic and damaging effect on state budgets and the National Governors' Association indicates the repercussions of this downturn will last for several years.

Twenty states have cut $7.6 billion from their fiscal year 2009 budgets, and 30 states have identified additional shortfalls totaling more than $30 billion. Twenty-five states have also identified shortfalls of $60 billion for FY 2010. In many cases, these budget shortfalls are forcing states to delay billions of dollars in planned transportation improvements. [33]

America's Top Five Transportation Headache Remedies

Transportation Headache Remedy Number One: Begin work immediately on "ready-to-go" transportation projects.

Transportation officials have identified numerous "ready-to-go" projects that could start immediately to improve the condition and performance of the nation's roads, highways, bridges and public transit systems. These projects would provide smoother pavement conditions, repair deficient bridges, improve transit service, relieve traffic congestion and increase traffic safety.

AASHTO found in a new survey that state transportation departments have 5,280 highway and bridge projects worth $64 billion which can be under contract within 180 days of the approval of additional funding.[34]

Similarly, the American Public Transit Association found in a recent survey that 736 transit projects totaling $12.2 billion are ready to begin within 90 days if funding is made available.[35]

Transportation Headache Remedy Number Two: Boost transportation funding to stimulate economic growth in the short, medium and long-term.

The U.S. construction sector has been particularly hard hit by unemployment. Swift implementation of a significant program of transportation improvements can support good-paying jobs, and boost economic productivity.

The nation's labor market is ready to respond to a significant increase in the number of highway and transit improvement projects. In December 2008, the national unemployment rate reached 7.2 percent overall and 15.3 percent in the construction sector.[36]

If funding for transportation projects is approved, it would provide an immediate economic boost in related industries as these industries immediately start to increase production to meet the anticipated additional demand created by transportation spending. These related industries include quarrying, energy and equipment and vehicle manufacturing that provide materials or products related to surface transportation repairs or improvements.

Investment in the nation's roads, highways and bridges also supports numerous jobs. A 2007 analysis by the Federal Highway Administration found that every $1 billion invested in highway construction would support approximately 27,800 jobs, including approximately 9,500 in the construction sector, approximately 4,300 jobs in industries supporting the construction sector, and approximately 14,000 other jobs induced in non-construction related sectors of the economy.[37] If $1 billion in federal highway spending is combined with $250 million in state funding, the combined investment would support 34,779 jobs.[38]

Transportation projects that reduce traffic congestion levels can also have a significant positive impact on long-term job creation by improving the nation's productivity. A comprehensive 2002 Transportation Research Board report on the adequacy of U.S. freight movement capabilities found that worsening traffic congestion will likely reduce the efficiency and competitiveness of some U.S. businesses.[39] The report also found that some U.S. businesses are likely to respond to increasing congestion by moving some facilities to less-congested parts of the U.S. or to other countries.[40]

Transportation Headache Remedy Number Three: Recognize that the benefits of surface transportation improvements outweigh the costs.

Improvements to the nation's roadway and public transit systems provide public benefits outweighing the costs.

The U.S. Department of Transportation, in its 2006 *Status of the Nation's Highways, Bridges, and Transit: Conditions and Performance Report*, found that at current funding levels, every dollar invested in the nation's highway system yields $5.69 in economic benefits in reduced delays, improved safety, reduced emissions, lower vehicle operating costs and reduced maintenance costs.[41]

Every dollar invested in the nation's public transit system has been found to provide $6 in benefits in the form of time savings, parking and travel time savings, avoided job loss, avoided

welfare payments, avoided vehicle crashes, avoided congestion and pollution, increased central city labor opportunities, increased mobility for people without access to private vehicles, and improved educational opportunities.[42]

Transportation Headache Remedy Number Four: Support state efforts to use innovation and advanced technology to build highway and bridge improvements that last longer, are environmentally savvy, and take less time.

Transportation agencies and the private sector have made significant progress in developing highway and bridge designs, construction techniques and materials that last longer and require less time for repairs.

Transportation agencies, particularly at the state level, are adopting a pavement preservation approach that emphasizes making early initial repairs to pavement surfaces while they are still in good condition and using higher-quality paving materials to reduce the cost of keeping roads smooth by delaying the need for costly reconstruction.[43]

The use of thicker pavements and more durable designs and materials for a particular roadway are being used to increase the life span of road and highway surfaces and delay the need for significant repairs. These new pavements include high performance concrete pavements and improved hot mix asphalt pavements.[44]

Transportation agencies are increasingly using innovative designs, materials and construction methods for bridge construction and repair to ensure that bridges last longer and to reduce construction times and traffic disruptions. These improved bridge construction and repair practices include the use of high-performance concrete and high-performance steel as well as the use of accelerated bridge construction, often through the use of pre-fabricated bridge elements.[45]

Transportation Headache Remedy Number Five: Make a down-payment on the nation's transportation needs immediately, and address long-term improvements in the near future.

Immediate transportation infrastructure investment can play a significant role in hastening the nation's economic recovery. In addition, crafting a new long-range federal surface transportation program to replace the current program, which expires on September 30, 2009, provides an opportunity to set the nation on a course to achieving a safe, reliable and well-maintained system of roads, highways, bridges and public transit. Many comprehensive proposals have already been set forth that offer new ideas to meet the nation's transportation needs.

Investment in the nation's surface transportation system is likely to be more effective in providing Americans with safe, efficient and reliable mobility if this spending is based on a comprehensive plan for meeting the nation's future transportation needs. Fortunately, America's leading transportation experts have recently prepared a long-range plan to guide future investment in the nation's surface transportation system.

In early 2008, the congressionally mandated National Surface Transportation Policy and Revenue Study Commission released a long-term plan to ensure that the nation's surface transportation system meets America's future mobility needs and that it remains the preeminent surface transportation system in the world, one that is well-maintained, safe and reliable.

The Commission's report called for allocating funding through outcome-based, performance-driven programs supported by cost/benefit evaluations rather than political earmarking.[46] The Commission recommended consolidating the more than 100 current transportation funding programs into ten programs focused on key areas of national interest, including congestion relief, preservation of roads and bridges, improved freight transportation, improved roadway safety, improved rural access, improved environmental stewardship, and the development of environmentally-friendly energy sources.[47]

Similarly, AASHTO has developed a plan for the next future federal surface transportation program that would be accountable for results, would make investments based on community needs and would deliver projects on time and on budget.[48] AASHTO proposes that the federal surface transportation program be based on goals for meeting national objectives, be based on state-driven performance measures and be focused on six objectives of national interest: preservation and renewal, interstate commerce, safety, congestion reduction and connectivity for urban and rural areas, system operations and environmental protection.[49]

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